

**Taxonomic Studies of the Japanese Formicidae, Part 7.
Supplement to the genus *Vollenhovia* MAYR**

Mamoru TERAYAMA *

Laboratory of Applied Entomology, Faculty of Agriculture, The University of
Tokyo, 1-1-1, Yayoi, Bunkyo-ku, Tokyo, 113-0032 Japan

Abstract. A new species of the genus *Vollenhovia*, *V. yambaru*, is described from the Ryukyus, Japan. This species produces wingless ergatoid only as a reproductive female caste.

TERAYAMA & KINOMURA (1998) have recently studied the genus *Vollenhovia* of Myrmicinae from Japan, and described 4 new species. In this paper I add a new species of *Vollenhovia*.

The types are preserved in the collection of the Museum Nature and Human Activities, Sanda, Hyogo. Measurements and indices used in the paper followed those in the part 1 of this series.

Genus *Vollenhovia* MAYR

[Japanese name: Umematsu-ari-zoku]

Vollenhovia MAYR, 1865, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren, 1857, 1858, 1859, unter den Befehlen des Commodore B. von Wullerstorf-Urbair*. Zool. Theil, Formicidae: 21.
Type species: *Vollenhovia punctatostriata* MAYR, 1865.
For full synonymy see BOLTON (1995a).

Diagnosis. Small to moderate-sized ants: total length of workers around 2-8 mm. Frontal carina and antennal scrobe absent. Clypeus more or less longitudinally bicarinate. Antenna with 12 segments, rarely 11 segments, the funicles ending in a 3-segmented club. Frontal lobe present. Maxillary palp with 1-3 segments, usually 2 segments. Eye present, relatively large. Ventral processes distinct on meso- and metasternum. Middle and hind legs without tibial spur. Petiole sessile or subsessile. Subpetiolar process present, often blade-like. Petiole not particularly more voluminous than postpetiole in dorsal view.

Remarks. This genus is represented by about 50 described species and is mostly distributed in the Oriental and the Indo-Australian Regions, and a few in the Palaearctic (2 species) and the Australasian

*Correspondence: M. TERAYAMA c/o MATSUMOTO's Laboratory, Department of Biology, The University of Tokyo, Komaba, Meguro-ku, Tokyo, 153-8901 Japan

(1 species) Regions (BOLTON, 1995b).

Among 7 species mentioned by TERAYAMA & YAMAUCHI (1992), 6 have scientific names and the rest is described herein.

Japanese species. *V. amamiana* TERAYAMA & KINOMURA, *V. benzai* TERAYAMA & KINOMURA, *V. emeryi* WHEELER, *V. nipponica* KINOMURA & YAMAUCHI, *V. okinawana* TERAYAMA & KINOMURA, *V. sakishimana* TERAYAMA & KINOMURA, *V. yambaru* sp. nov.

***Vollenhovia yambaru* sp. nov.**

[Japanese name: Yanbaru-umematsu-ari]

(Figs. 1-2)

Vollenhovia sp. 7: TERAYAMA & YAMAUCHI, 1992, *In* MYRMECOL. SOC. JAPAN (ed.), *A guide for the identification of Japanese ants (III)* : 50.

Diagnosis. Total length of workers around 2.5 mm. Body color yellowish brown to reddish brown. No sculpturing on a median strip of the promesonotal dorsum, which is smooth and shining. Dorsal profile of postpetiole slightly concave posteriorly. Subpetiolar process relatively small. Queens known from ergatoid only.

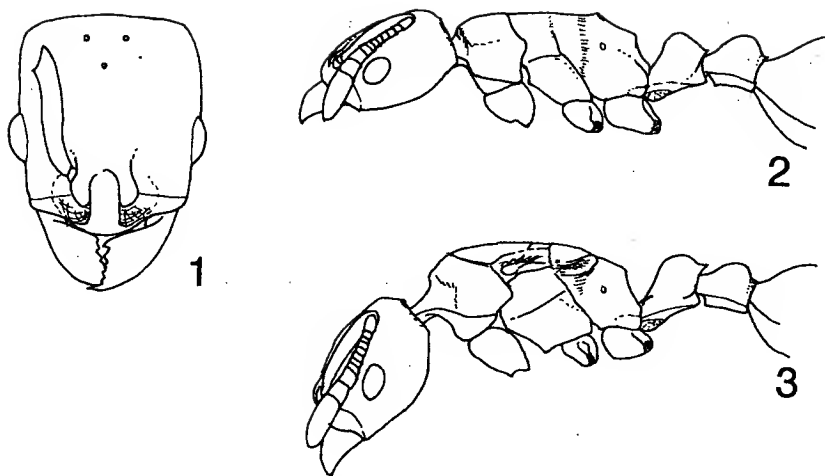
Description of holotype (Worker). HL 0.53 mm; HW 0.45 mm; SL 0.31 mm; CI 85; SI 69; WL 0.60 mm; PW 0.35 mm; PL 0.25 mm; PH 0.24 mm; DPW 0.15 mm; TL 2.1 mm.

Head longer than wide, with subparallel sides and weakly concave posterior margin in full face view. Mandible with 7 teeth; basalmost tooth minute. Clypeal carinae subparallel. Antenna with 12 segments; scape 0.58 times head length. Eye 0.13 mm in maximum diameter.

Dorsum of promesonotum almost straight in profile; metanotal groove not incised dorsally; posterodorsal corner of propodeum bluntly angulate, without tooth in profile.

Petiole as long as high, with convex dorsal outline in profile; anterodorsal and posterodorsal corners not forming an angle. Subpetiolar process low and small; its thin lamellar wall ca. 0.04 mm in height. Postpetiole slightly longer than high, highest at posterior 1/3 in profile; posterodorsal margin concave.

Head shagreened with relatively large coarse punctures; space between punctures less than 0.5 times their own diameters; dorsum of mesosoma punctated with unsculptured longitudinal band medially; mesosoma, propodeum and petiole reticulate; sculpture on petiole weaker than that on propodeum; postpetiole smooth in most part; gaster and legs smooth and subopaque.



Figs. 1-3. *Vollenkovia yambaru* sp. nov. and *V. okinawana* TERAYAMA & KINOMURA — 1-2, *V. yambaru* sp. nov., ergatoid queen; 3, *V. okinawana* TERAYAMA & KINOMURA, winged queen. 1, Head in full face view; 2, 3, body in profile.

Color reddish brown; mandible, antenna, and legs yellowish brown; frons without dark brown spot.

Queen. Ergatoid. HL 0.60 mm; HW 0.53 mm; SL 0.34 mm; CI 88; SI 64; WL 0.75 mm; PL 0.25 mm; PH 0.28 mm; DPW 0.18 mm; TL 2.6 mm.

Head longer than wide, with slightly concave posterior margin in full face view; mandible with 7 teeth; antennal scape not reaching posterior margin of head; eye 0.14 mm in maximum diameter; ocelli relatively small, forming a right triangle.

Mesosoma with straight posterior margin in profile; in dorsal view 0.43 mm in maximum width; tegra absent; scutum relatively small, axilla and scutellum unrecognizable; posterodorsal corner bluntly angulated, without tooth; dorsum of pro- and mesonotum coarsely punctated, with smooth interspaces; mesonotum with an unsculptured longitudinal band medially.

Petiole higher than long, with convex dorsal outline in profile. Subpetiolar process low and small. Postpetiole highest at posterior $1/3$, with concave posterodorsal margin in profile.

Color reddish brown; antenna and legs yellowish brown; ocellar triangular area dark brown; frons without large brown spot.

Holotype. Worker, Fuku-gawa, Okinawa-jima, Okinawa Pref., 4. XII. 1990, K. YAMAUCHI leg.

Paratypes. 4 workers, 1 queen, same data as holotype; 1 worker, 1 queen, same locality, 31. XII. 1985, K. YAMAUCHI leg.; 2 workers, 1 queen, same locality, 30. XII. 1990, K. YAMAUCHI leg.; 6 workers, 5 males, 1 queen, Terukubi-yama, Okinawa-jima, Okinawa Pref., 22. XII. 1991, K. YAMAUCHI leg.; 2 workers, 5 queens, Chibana, Okinawa-jima,

Okinawa Pref., 21. III. 1983, H. TAKAMINE leg.

Distribution. Okinawa I.

Remarks. I am unable to distinguish workers of this species from those of *Vollenhovia okinawana* TERAYAMA & KINOMURA. However, I treat this as a separate species because all of its known queens are wingless ergatoids, while those of *okinawana* are winged. This new species is known only from native forests in the northern part of the Okinawa Island, while *V. okinawana* is widely distributed from southern to northern regions of the island.

This new species is also similar to *V. benzai* TERAYAMA & KINOMURA from Kyushu, the Tokara and the Amami Isls. However, it is distinguished from the latter by the shape of the postpetiole which is highest at posterior 1/3 and concave posterodorsal margin in the worker (highest at midlength and convex posterodorsal margin in *benzai*).

Acknowledgements

I would like to thank Dr. K. YAMAUCHI (Gifu Univ.) and Mr. K. KINOMURA (Gifu-shi) for offering valuable material.

References

- BOLTON, B., 1995a. *A new General Catalogue of the Ants of the World*. 504 pp Cambridge, Mass., Harvard University Press.
- BOLTON, B., 1995b. A taxonomic and zoogeographical census of the extant ant taxa (Hymenoptera: Formicidae). *J. Nat. Hist.*, **29**: 1037-1056.
- MAYR, G., 1865, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren, 1857, 1858, 1859, unter den befehlen des Commodore B. von Wullerstorf-Urbair*. Zool. Theil, Formicidae; 119 pp. Wien. (Indirectly cited.)
- OGATA, K., 1991. A generic synopsis of the poneroid complex of the family Formicidae in Japan (Hymenoptera). Part II. Subfamily Myrmicinae. *Bull. Inst. Trop. Agr., Kyushu Univ.*, **14**: 61-149.
- TERAYAMA, M. & K. KINOMURA, 1998 (1997). Taxonomic studies of Japanese Formicidae. Part 3: Genus *Vollenhovia* MAYR. *Nature and Human Activities*, **2**: 1-8.
- TERAYAMA, M. & K. YAMAUCHI, 1992. Genus *Vollenhovia*. In MYRMECOLOGICAL SOCIETY OF JAPAN (ed.), *A Guide for the Identification of Japanese Ants (III) Myrmicinae and Supplement to Leptanillinae (Hymenoptera: Formicidae)*, pp. 48-55. The Myrmecological Society of Japan, Tokyo. (In Japanese.)